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Section 4 : 2D skins (textures)

A 2D skin is a .dds texture graphic, applied to the surface of the car model. We will use the Stadium car to work on... of course our lessons will work for all other environments as well...

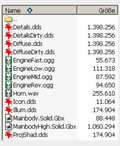
For your understanding
The instructions, which texture + how a texture will be used to illustrate the car, is stored WITHIN the 3D model. The names of the textures are always the same (given by Nadeo), but every single 3D model decides if/how it wants to use them or not...

Let's take a look at our fully loaded zip archive again.

All the **.DDS** files are 2D Skin textures, applied to the car model in one or the other way.

A detailed explanation of the different textures' functions follows below.

And again
Adding one of these textures to your custom car zip only makes sense if your texture is different from the one Trackmania would automatically add from its own resources, while assembling your car.



The most simple custom car zip file

Most people are completely satisfied with putting 2 customised texture graphics into their zip archive: **Icon.dds** and **Diffuse.dds**:

These 2 texture graphics, alone in a .zip archive are already a nifty and simple way to individualise your car's appearance. And besides that, the zip file is still pretty small and can be quickly transfered to other online players.

Icon.dds (TMN + TMU)
This little graphic file will be displayed in your user profile, showing a thumbnail preview of your car... it has nothing to do with how your car is assembled.
The format of this file is always the same, no matter what 3D model or 2D skins you use in your archive.

Size: 128 x 128 pixels
DDS Format: DXT1 compression, simple alpha channel.

Diffuse.dds (TMN + TMU)
This is the surface picture, which will be layed upon the 3D default car model. (Our example shows the Blue color skin for the United Stadium Car).

Size: anywhere from 512x512 to 2048x2048,depending on your quality wishes.
DDS Format: DXT5 compression (alpha channel sets "shinyness" of parts)

CLICK IMAGE TO ZOOM

At first this looks a bit irritating. Different parts of this picture will be layed upon different parts of the car model.

Now you get a rough idea of where parts of the diffuse dds are applied on the car.

CLICK IMAGE TO ZOOM

Additional 2D Skin texture files

But of course you can blow up the size of your custom car zip archive by including several more textures to individualise the car's looks.

DiffuseDirty.dds (TMU only)

Same layout as the Diffuse.dds, but this texture shows how the car's surface will look when getting dirty from the mud sections in the TMU Stadium environment.

Size: same as "Diffuse.dds".
DDS Format: same as "Diffuse.dds".

CLICK IMAGE TO ZOOM

Details.dds (TMN + TMU)
This texture contains nice details, such as steering wheel, driver's suit, rims and tires etc.

In TMN, the standard 3D car model won't use the Details.dds in the zip archive, but load it from a fixed data folder within the TMN installation directory.

However, if a custom 3D car model is in the zip file, this texture can be included in the zip file as well.

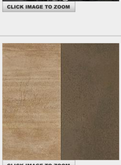
Size: 1024x1024
DDS Format: DXT5 compression (alpha channel sets "shinyness" of parts)

CLICK IMAGE TO ZOOM

DetailsDirty.dds (TMU only)

The name pretty muchs says it all, it's the same as with the the DiffuseDirty.dds.

Size: same as "Details.dds".
DDS Format: same as "Details.dds".


CLICK IMAGE TO ZOOM

Illum.dds (TMU only)
This texture is a "copy" of the Details.dds texture, but with 1 difference: Only the objects which shall be illuminated are still in the picture ! Everything else is black..

Size: same as "Details.dds".
DDS Format: same as "Details.dds".

Note: Sometimes it's necessary to insert an "Illum.dds" into the zip archive, even if it's only pure black, to avoid illumination bugs.

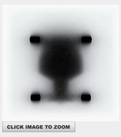
CLICK IMAGE TO ZOOM

Projshad.dds (TMN + TMU)

This file is responsible for the shadow that is put on the floor.

Size: 512x512 - 1024x1024
DDS Format: DXT1c / no alpha

We have an extra tutorial for creating custom shadows such as "Underbody Neon"...


CLICK IMAGE TO ZOOM

Skins for custom made 3D models

I already told you that the 3D model contains instructions on how/if these textures above are used.

Don't be surprised if a "Diffuse.dds" for a **custom 3d model looks totally different** compared to the one shown above. It's in the 3D model author's freedom to map the texture file onto the car model the way he wants it to...

And sometimes authors of 3D models **forget** to **implement** the **useage of** certain **textures** (like e.g. Projshad.dds). That's a pity, but you can't change it...

How to paint your own 2D Skin textures

If you feel like adventuring, you can start painting your textures now (You could also use Trackmania's internal painting tool, which might be useful for beginners).

Nevertheless, the "**Paint a custom car skin**" tutorial will teach you how to do it manually.

Section 5: Sounds

You've got the possibility to add a horn sound and lots of engine sounds to your custom car zip archive as well.
Please note, that you can't put sounds alone in a car zip, at least an Icon.dds and Diffuse.dds must be in it as well, otherwise you might encounter instability issues...

Engine sounds

The **engine sounds** should be saved in this format:
Codec: **ogg** compression
Channels: **2** (Stereo)
Usually these files are created in a way that you can't hear any transition when they loop.

EngineIdle.ogg	Sound when your car is standing
EngineLow.ogg	Sound when your car is in 1st gear
EngineMid.ogg	Sound when your car is in 2nd + 3rd gear
EngineFast.ogg	Sound comes in when your car is heading towards high speed
EngineRev.ogg	Sound when your car accelerates in reverse gear
EngineRev2.ogg	Sound when your car drives in reverse gear pretty fast
Roar.ogg	Sound when your car begins to accelerate

Trackmania has a special feature while playing sounds in "**water near**" sections of Stadium, Bay, Coast and Island...

Trackmania will play only the right channel of the Engine sounds to create a special "wet" soundstage. The **right channel** sound should be therefor dampened a lot (if you create custom ones)...

Horn sound

The **horn sound** should be saved in this format:
Codec: **wav** (windows pcm file)
Channels: **1** (Mono)

Horn.wav	Honk a lot to irritate other people ^^

Section 6: Where to put your custom car zip file ?

Trackmania (zip files **including** 3D car model)

C:\...\My documents\TrackMania\Skins\Vehicles\Carcommon\

Trackmania (zip files **excluding** 3D model, only including 2D skins)

C:\...\My documents\TrackMania\Skins\Vehicles**[Environment]**\
In our example [Environment] would be "StadiumCar", but this always depends on what standard car model the custom textures were made for.

Attention!
Using `locators` on car.zip files is a bit special !
If you decide to use locators for transfering your car.zip to other people, you should still have the **zip file** in the directory; TOGETHER with the **.loc** file.

Additionally, you should set the properties of both files to "**read only**"(write protected, otherwise a little bug in Trackmania could destroy your files !!!

Section 7: Original texture & sound resources

Surely you can use the original textures and sounds as a basis for creating new things...Be aware that the **filenames** and **formats** of these originals are often very **different** from the filenames they must have in the .zip archive !!!

Sound resources

[Game Install folder]\GameData\Vehicles\Media\Audio\Sound\WavData

In this directory there are many many sounds of the different environments mixed together... e.g. you have 6 different horn sounds, BayCarHorn.wav, CoastCarHorn.wav, RallyCarHorn.wav, SnowCarHorn.wav, SpeedCarHorn.wav and SportCarHorn.wav.

The Stadium car uses lots of sounds from other cars, such as "BayCarHorn.wav" or "SportCarEngine...wav" sounds.
So watch out that you catch the right one, rename it properly (and convert it to ogg if necessary), if you want to put it in your zip file...

TMU Texture resources

The different colour skin zips for all environments (incl. Diffuse.dds and Icon.dds) are in

[Game Install]\GameData\Skins\Vehicles\[Environment]
Textures like Shadow, Details and Illumination for all environents can be found here:
[Game Install]\GameData\Vehicles\Media\Texture\Image

The Default shadow texture is
[Game Install]\GameData\Vehicles\Media\Texture\Image\StadiumCarShadowProj.dds
It must be renamed to "ProjShad.dds" when beeing inserted into the zip file.

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